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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**



Appl. No. : 09/746,361
Applicant : Thomas M. Armstrong
Filed : December 22, 2000
TC/A.U. : 2877
Examiner : Amanda H. Merlino

Confirmation No.: 2193

Docket No. : PB0092
Customer No. : 22840

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

August 1, 2005

APPEAL BRIEF

Sir:

In response to the Notification of Non-Compliant Appeal Brief (37 CFR 41.37) having the mailing date of July 22, 2005, Appellants submit this amended Appeal Brief in triplicate, appealing from the December 6, 2004, rejection of the Primary Examiner, finally rejecting claims 1-21 in the captioned application. The Notice of Appeal was filed on March 10, 2005, which contained authorization to charge the "Appeal Fee" to Appellants' Deposit Account. The Appeal Brief filed on May 11, 2005, was filed with a Transmittal of Appeal Brief (Large Entity), in duplicate, which contained authorization to charge the fee for filing the Appeal Brief to Appellants' Deposit Account. Appellants do not believe any additional fees are required. However, Appellants' hereby authorize the Commissioner to debit any fees due and credit any overcharges to Appellants' Deposit Account No. 502-590.

Real Party in Interest

Amersham Biosciences (SV) Corp, formerly known as Molecular Dynamics, Inc., owner of the captioned application, is the real party in interest to this appeal.

Related Appeals and Interferences

There are no other appeals or interferences related to the instant appeal.

Status of Claims

Claims 1–21 are pending in the captioned application. Claims 1–21 are currently under examination and are rejected. Claims 1–21 are appealed and are reproduced in Appendix A, attached hereto.

Status of Amendments

Appellants did not request any amendment after Examiner's final rejection of all claims.

Summary of Claimed Subject Matter

The instant invention related to a tube or chamber optimized for applications as part of an optical system. This tube or chamber includes an optically transmissive elongate tubular body having an elongate tubular body wall including an interior surface and an exterior surface. The interior surface of the tubular body wall defines an elongate bore for containment or transport of a sample material to be analyzed. The body wall further includes a first portion, through which incident radiation passes, having a non-

uniform thickness about the sample passageway so as to optimize optical coupling therethrough.

Claim 1 directs to an optical analysis chamber, comprising: an optically transmissive elongate tubular body having an elongate tubular body wall including an interior surface and an exterior surface, said interior surface of said body wall defining an elongate separation chamber that is in direct contact with a sample material being analyzed; wherein said body wall further includes a first optically transmissive window, said window having a substantially convex exterior surface portion, through which optical radiation passes, said window having a non-uniform thickness about the separation chamber selected so as to optimize optical coupling therewith for analyzing said sample material. Claims 2-21 directly or indirectly depend on claim 1. Support for the claimed invention can be found throughout the specification (e.g. Figures 4, 5, 9, 10; page 3, lines 25-31, page 12, lines 9-11, page 16, lines 12-13 and 25-31, amongst others).

Grounds of Rejection to be Reviewed on Appeal

1. Whether claims 1-21 are properly rejected under 35 U.S. C. 102 (e) as being anticipated by Gilby (US 6,239,871).

Argument

1. **Claims 1-21 are not properly rejected under 35 U.S. C. 102(e) as being anticipated by Gilby (US 6,239,871).**

In a final office action dated December 6, 2004, the Examiner has rejected claims 1-21 under 35 U.S.C. § 102(e) as being clearly anticipated by Gilby (6,239,871).

Specifically, the Examiner states, “Gilby teaches of an optical analysis chamber comprising an optically transmissive elongated tubular body (112) having an interior and exterior surface wherein the interior surface of the tubular body is the exterior surface of the cell (116), wherein said interior surface wall defines an elongate separation chamber that is in direct contact with a sample material, said body wall having a window (100) having a substantially convex exterior surface wherein said window has a non uniform thickness (figure 2A) and wherein the longitudinal axis of the sample passageway is offset from the tubular body”.

In response, Appellants disagree and submit that the Examiner was mischaracterizing the teachings of Gilby. Appellants respectfully submit that Gilby clearly did not include each and every limitation of the claims of the present invention. Furthermore, Gilby failed to disclose, teach, or suggest the present invention. Gilby discloses an optical scheme including a hyper-hemisphere and a hemisphere, both with a substantially planar surface. The substantially planar surface of the hyper-hemisphere is optimally located so that a capillary or cell is positioned at an internal aplanatic radius, resulting in an aplanatic focus at the capillary or cell such that the spherical aberration and coma are zero (Abstract and Figure 2A). Specifically, Appellants disagree with Examiner’s statement that the Gilby “interior surface wall defines an elongate separation chamber that is in direct contact with a sample material”. Appellants submit that, unlike the current invention which the interior of the optical chamber houses the analyte sample directly, a capillary or cell has to be placed in the Gilby optical scheme, and sample analytes are contained within the capillary or cell.

Further, as it is seen in Figure 2A of Gilby, the substantially planar surfaces of the hyper-hemisphere and the hemisphere, 102 and 110 respectively, are mated such that the grooves 104 and 112 form a channel 114. A capillary or cell (for analyte separation) is then inserted into this channel, and the air space between the channel and capillary is filled with an index matched liquid or gel (Col. 4, ll. 24-51). Contrary to the current invention, the separation chamber (cell or capillary) in the optical apparatus of Gilby is clearly separated from the other components (Col. 4, ll.24-51; Claim1). In view of these comments, Appellants respectfully submit that the present invention is patentably distinct from Gilby. Reconsideration and withdrawal of the rejection are respectfully requested.

Appellants believe the above also makes clear that Examiner's Response to Arguments in the final office action is in error. Firstly, although Examiner is in agreement with Appellants with regard to the differences between the current invention and that of Gilby, Examiner maintains that "the limitations in the claims do not clearly distinguish between Gilby and the current invention. Gilby clearly shows all the limitations of the present claims." Appellants submit that the claims clearly distinguish from the invention of Gilby. The only independent claim, claim 1, clearly states that the elongate separation chamber defined by the interior surface "is in direct contact with a sample material being analyzed". Appellants submit that this clearly differentiates the current invention from that of Gilby.

Secondly, Appellants disagree with the argument made by Examiner stating that "the claims can be interpreted as the tubular body (112) having an interior and exterior surface wherein the interior surface of the body (112) is the same as the surface of the cell (116), which is in contact with the material and the exterior surface can be either

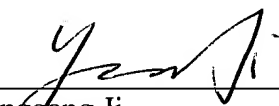
interpreted as (104 or 100).” Appellants submit that Examiner erred in stating that “the interior surface of the body (112) is the same as the surface of the cell (116), which is in contact with the material”. It is obvious to Appellants that the interior surface of the tubular body can not be interpreted as “the same as the surface of the cell”. Appellants also submit that Examiner erred in stating that “the exterior surface can be either interpreted as (104 or 100).” It is again obvious to Appellants that the exterior surface is (100) and can not be interpreted as (104).

In view of the foregoing, Appellants respectfully submit that the Examiner’s rejection cannot be sustained and should be withdrawn.

Conclusion

In view of the foregoing, Appellants respectfully assert that the Examiner’s rejection cannot be sustained and respectfully requests the reversal of the rejection.

Respectfully submitted,

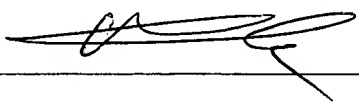


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Appeal Brief – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on August 1, 2005.

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CLAIMS APPENDIX

The Rejected Claims

Claim 1 (previously presented): An optical analysis chamber, comprising:

An optically transmissive elongate tubular body having an elongate tubular body wall including an interior surface and an exterior surface, said interior surface of said body wall defining an elongate separation chamber that is in direct contact with a sample material being analyzed;

Wherein said body wall further includes a first optically transmissive window, said window having a substantially convex exterior surface portion, through which optical radiation passes, said window having a non-uniform thickness about the separation chamber selected so as to optimize optical coupling therewith for analyzing said sample material.

Claim 2 (original): The optical analysis chamber of claim 1, wherein said first window further comprises a substantially curved interior surface portion.

Claim 3 (original): The optical analysis chamber of claim 2, wherein said tubular body is an electrophoresis capillary.

Claim 4 (original): The optical analysis chamber of claim 2, wherein said exterior surface of said first window defines an optical interrogation beam transmission surface having a substantially semi-cylindrical shape.

Claim 5 (previously presented): The optical analysis chamber of claim 2, wherein the longitudinal axis of said separation chamber is offset from the longitudinal axis of said tubular body.

Claim 6 (original): The optical analysis chamber of claim 2, wherein said exterior surface of said window defines an optical interrogation beam transmission surface having a substantially acylindrical shape.

Claim 7 (previously presented): The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed through said separation chamber and is brought substantially to focus at a location near said exterior surface of said tubular body beyond said separation chamber.

Claim 8 (previously presented): The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed through said separation chamber and is brought substantially to focus at a location near said interior surface of said tubular body beyond the center of said separation chamber.

Claim 9 (previously presented): The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed through said separation chamber and is brought substantially to focus at a location within said separation chamber.

Claim 10 (previously presented): The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed through said separation chamber and is brought substantially to focus at a location near said interior surface of said tubular body before the center of said separation chamber.

Claim 11 (previously presented): The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed to substantially focus about the center of said separation chamber.

Claim 12 (previously presented): The optical analysis chamber of claim 2, wherein a portion of said exterior surface includes a reflective coating so as to redirect optical radiation towards said separation chamber.

Claim 13 (original): The optical analysis chamber of claim 2, wherein a portion of said exterior surface of said tubular body is formed to be substantially curved.

Claim 14 (original): The optical analysis chamber of claim 2, wherein said exterior surface of said tubular body further includes at least one facet for cooperatively aligning adjacent said optical analysis chambers within an array of said optical analysis chambers.

Claim 15 (original): The optical analysis chamber of claim 2, wherein said exterior surface of said tubular body further includes a pair of opposed planar facets for

cooperatively aligning adjacent said optical analysis chambers within an array of said optical analysis chambers.

Claim 16 (previously presented): The optical analysis chamber of claim 1, wherein said body wall further includes a portion functioning as an second window selected to optimize optical coupling of information-carrying radiation out of said separation chamber.

Claim 17 (original): The optical analysis chamber of claim 16, wherein said first window is distinct from said second window.

Claim 18 (original): The optical analysis chamber of claim 16, wherein said first window is substantially orthogonally oriented with said second window.

Claim 19 (original): The optical analysis chamber of claim 2, wherein the cross-section of said tubular body is bilaterally symmetric.

Claim 20 (original): The optical analysis chamber of claim 2, wherein the cross-section of the external surface of said tubular body has no axis of symmetry.

Claim 21 (original): The optical analysis chamber of claim 17, wherein said tubular body wall further comprises a third window selected to optimally couple radiation therethrough.

EVIDENCE APPENDIX

Applicants hereby append a copy of U.S. Patent 6,239,871 by Gilby. This is the evidence relied upon by the Examiner for rejection of appealed claims.

RELATED PROCEEDINGS APPENDIX

There are no other appeals or interferences related to the instant appeal.